VOL. 1. NO. 4.

AMERICAN
VETERINARY REVIEW.

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PUBLISHED BY THE

UNITED STATES
VETERINARY MEDICAL ASSOCIATION.

JUNE, 1877.

New York:
STYLES & CASH, GENERAL STEAM PRINTERS & STATIONERS, 77 EIGHTH AVE.

1877.

CONTENTS.

Page.

ORIGINAL ARTICLES.—Pyogenic Cellulitis. By E. MINK, V. S., Rochester, N. Y. ... 77
Cerebro-Spinal Meningitis. By THEO. S. VERY, V. S., Boston, Mass. 81
Veterinary Education. By D. McEACHRAN, F.R.C.V.S., Montreal, Can. 85

EDITORIAL.—Veterinary Education ... 92
Preliminary Education ... 95
Castration of Criptorchids ... 95
Lived too Long ... 96

ABSTRACTS FROM FOREIGN JOURNALS. By A. LIAUTARD, M.D.V.S. 97
Lesions of the Brain and of the Cardial Ganglions in Rabies ... 97
Trichiniæ Spiralis observed on a Dog ... 97
Contribution to the Study of the Experimental and Comparative Pathology of Glanders ... 98
Colotomy in the Horse ... 99
Gases in the Stomachs of Ruminants ... 100
Bites of a Rabid Donkey to a Child ... 100
Interesting Post-Mortem ... 101

TRANSLATIONS BY DR. OSLER, of McGill University and Montreal Veterinary College—Diptheria in the Calf ... 101
Duration of Life in Encapsuled Trichiniæ ... 103

REPORTS OF CASES.—Cases to Serve to the History of Fractures, By A. LIAUTARD, M. D. V. S. ... 106

VARIETIES AND NEWS.—Knocking at the Wrong Door ... 108
Castration of Criptorchids ... 109
Philadelphia Veterinary College ... 110
New Cure for Hydrophobia ... 111
How Nerves end in Tendons ... 112

COMMUNICATIONS RECEIVED ... 112

PAPERS EXCHANGED ... 113

SPECIMENS RECEIVED ... 120

AMERICAN VETERINARY REVIEW,

JUNE, 1877.

ORIGINAL ARTICLES.

PYOGENIC CELLULITIS.

By E. Mink, V. S., Rochester, N. Y.

On May 4th, 1875, I was called to see a fine bay gelding, five years old, one of a valuable pair owned by P. I. Thomas, Esq., of Rose, Wayne Co., N. Y., forty-eight miles distant from this city.

On arriving there, I found that a number of horses and colts owned by Mr. Thomas, and kept on the same premises, had suffered, and some still were suffering from pyogenic fever (strangles). And this one was also a victim, as was clearly manifested by the usual swelling in the submaxillary region, and in addition to this, his off fore limb was the seat of diffuse inflammation and suppuration.

In the absence of strangles, I would have diagnosed this affection of the limb as phlegmonous erysipelas or erysipelatous cellulitis. Perhaps one or the other of these terms would be more proper than pyogenic cellulitis; yet this seems to me, under all the conditions then existing, a more appropriate name than either of the others for this local affection.

For two or three weeks prior to this attack and up to it, he was troubled with cracked heels of this limb. I regard the diseased condition of the heels as the cause that determined pyogenic action to this limb.

The probability is that in the absence of cracked heels, the specific disease would have run its regular course, and suppuration would have been confined to an abscess or abscesses in the submaxillary region and terminated favorably.

The treatment ordered was as follows: Fomentations to the swollen parts; a laxative, nutritious diet, and if he refused solid food, was to have two or three gallons of milk daily. Whisky, tinc. muriate of iron, and quinine were also to be given three times per day. His allowance of water to be limited so as to induce him to drink the milk. Any accumulations of pus were to be opened and let out.

On May 13th I again saw him. He was then able to move around some, was out eating some grass, and suffering but little apparent pain in the limb, though much emaciated. There was pus in the limb above the knee, burrowed around and beneath the muscles of the parts, difficult to let out by lancing.

I advised tonics, stimulants and nutritious food, but he gradually failed until his condition was hopeless, and he was destroyed.

— May 26th, 1876, was called to the Rochester Driving Park to attend a bay gelding, four years old, for the purpose of treating a capped hock. It was of recent origin, and attended with slight inflammatory action. I advised a cooling lotion, which was applied for about a week, when I passed a seton through it. This was immediately succeeded by more than the usual amount of inflammatory action resulting from the use of setons in such cases. A laxative diet, some magnesia sulphate and fomentations to the limb were ordered.

I found that the seton failed to establish a discharge of healthy looking pus. I intended leaving it in until such discharge was produced.

I again visited, by request, on the 11th day of June, and found him suffering from pyogenic fever. The submaxillary space was much swollen, and the setoned limb affected with diffuse cellular inflammation and suppuration. About four inches above the tarsus, on the inner aspect of the limb, I found a collection of pus, which I opened. This wound afterwards showed a tendency to slough.

Pus formed in various parts of the limb, and around the throat, lips and side of the head, which I opened, from time to time, as it collected. Large collections of pus also formed in the scrotal region which were opened and let out.

His condition continued without any material change until about the 10th of July, when improvement commenced, and he finally made a complete recovery.

In regard to treatment he was allowed to run at grass during the day in an orchard around his stable, and occupied the carriage floor of a barn at night. His water allowance was restricted, and its place freely

supplied with milk. In addition to this he was allowed oats, corn, or a little of any nutritious food that he would eat. The swollen parts were fomented with warm water, and then dressed with a lotion of carbolic acid. The medicines used internally were whisky, belladonna, iron sulphate, nux vomica, and ginger. The whisky was given in his milk, and the belladonna in a syrup thrown on his tongue. These were given during the period when the vital powers were most prostrated. The iron, nux vomica and ginger when convalescence was apparent. His recovery was complete about the 1st of August.

— On the 30th day of November last, I was called to attend a valuable black mare, six years old, about sixteen hands high, well proportioned, and in a condition that showed her system had been well nourished, possessing an abundance of both fatty and muscular tissue, an animal that had been converted from a pacer to a trotter, and capable of trotting a mile in less than 2.40, the property of S. G. Curtice, Esq., of this city.

In reply to inquiries, I was informed that she had never had strangles, nor had she been a victim of the epizootic influenza in 1872, although she had been permitted to run in a field with other horses that were affected with it at that time. She had not been used prior to this sickness from February, 1876, until within four days previous to this attack. She had been allowed this period of idleness in consequence of a curb she had thrown out. She appeared well and lively the first and second time she was driven, but on harnessing her the third time, an abrasion of the skin and a swelling at the base of the tail (caused by the crupper,) was discovered. Swelling and inflammation rapidly increased until the day I was called, when I found diffuse inflammation and suppuration of the tail, extending throughout its entire length. I made a number of openings from which pus freely escaped. There was also much swelling and tenderness along side of and over the region of the sacrum at this time. Her pulse was 62 per minute, soft and compressible—appeared much depressed. Next day I was informed that she showed some difficulty in swallowing either food or water. On examination I attributed this to a want of power in the muscles of deglutition, the result of the generally depressed condition of her system, as I found no swelling of any kind about the submaxillary region, nor any evidence of pharyngitis or laryngitis. In a few days pus had formed and collected over the region of the sacrum, which was also provided with an opening. She now showed great prostration, and could scarcely move without danger of falling. I placed her in slings, and ordered a liberal allowance of milk

(as she refused nearly all solid food), and six ounces of whisky and a scruple of quinine three times a day. Each dose of this seemed to temporarily increase her appetite, and she would immediately after take some solid food—oats, corn or hay. *A mash of malt* was given her every night, of which she seemed disposed to partake, and in a short time got so that she would eat two quarts at a feeding.

She continued along without material change in her condition for about twenty or thirty days, when her limbs, floor of the abdomen and chest became enormously œdematous or anasarcous. The whisky and quinine were continued up to the time her limbs, etc., became so much swollen, when I prescribed dilute sulphuric acid and pul. cinchona to be given in a pint or two of ale three times per day. The openings I had made continued to discharge more or less pus, and new collections formed every few days extending down the posterior illo femoral region, between the thighs, and to and in the mammæ, all of which were opened when the necessity of doing so was indicated. Her condition seemed nearly hopeless. Just above the tuberosity of the ischium a large collection of pus formed, extending between the muscles of the parts, which I cut down open. The pus gushed out, it seemed as if I had struck a reservoir of it.

From this time forward she improved; the discharges gradually diminished, her appetite increased, the œdema of the limbs, etc., gradually disappeared, returning strength was apparent, and she was able to move around some when allowed out of the slings, but was unable to rise, when down, without assistance with the slings. After using the dilute sulph. acid for about ten days, I substituted for it tinc. mur. iron, which was given with the ale and cinchona. She continued improvement until about the 1st of February, when both the owner and myself felt much elated over the prospect of a speedy recovery; but suddenly, to our surprise, she was seized with a painful synovial distension of the hocks and knees, and scarcely able to move again. I then prescribe iodide potas. to be given with pul. gentian and ale three times per day, and the painful joints were rubbed with soap liniment. Within ten days from this time she commenced improving, and soon got so that she could get along without the slings. Pus ceased to flow from all but two small openings, one just above the tuberosity of the ischium, and the other at the side of the base of the tail. Fluid injected in one came out of the other.

The muscles of the right hind quarter were left in an atrophied condition, and a corresponding loss of muscular power existed, and she

would knuckle over in this limb occasionally in walking. This quarter had been least affected with suppuration. The muscles are now developing with exercise and good food, and she is able to trot off quite well.

A slight discharge still continues from the two openings referred to. I have injected these every second day, with a solution of chloride of zinc (five grains to the ounce,) for a while. Within the last week have twice injected comp. tinc. iodine.

The question that presents itself to my mind in this case is whether this was, in reality the specific disease called strangles (pyogenic fever,) and if so, then I think that the abrasion on the tail caused by the crupper must be regarded as the "*vis fronte*" that determined pyogenic action of the specific disease to the tail and adjacent parts, the same as the setoned capped hock drew pyogenic action to the limb of the second subject referred to in this paper.

I wish to add a few lines, in concluding, in regard to milk as an article of diet in low forms of disease, and when solid food is refused. In my experience I have found that horses will drink it voluntarily when they will reject oatmeal gruel, and I think it preferable to any liquid food that can be given, as it supplies *all the elements of nutrition* which can scarcely be said of any other single article of diet. I think that with good, pure air, milk and whisky, nearly all cases of typhoid influenza can be successfully treated, or, at least, as many cases can be treated as successfully with these agents as with any other system of treatment usually adopted.

ROCHESTER, May 1, 1877.

CEREBRO SPINAL MENINGITIS.

BY THEO. S. VERY, V. S.

I have read with a great degree of interest, Prof. Large's account of the recent outbreak of cerebro spinal meningitis in the Brooklyn car stables, and am convinced that many of the conclusions drawn by him in relation to the pathology and treatment of the malady are strikingly correct. It may appear that nothing which I might write will add to the knowledge to be gleaned from what he has already given to the profession concerning it; but as our methods of thought differ widely, and we sometimes take opposite channels for the transmission of the same ideas, I trust not to be considered tedious or intrusive if I make a few

suggestions which have occurred to me; but, on the contrary, that my remarks may create additional thought and inquiry among those who may read them, even as I have studied and endeavored to fully comprehend the excellent article before alluded to.

I regard the pathology of the disease, as given by Prof. Large, as being certainly more satisfactory and compatible with its usual symptoms than that which traces the cause of those symptoms to inflammation of the membranes of the brain and spinal cord, and am pleased to be able to adopt it for that reason, if for no other. The symptoms in all the cases I have seen, have not included any signs of inflammation, characterized by unusual force or frequency of pulse, of increased temperature, or of positive pain. On the contrary, something has appeared to act depressingly on the whole system, so that no function could be said to be performed correctly, and no organ entirely free from that influence, varying, of course, in intensity of effects according to conditions and circumstances.

When I first became familiar with the disease, my ideas concerning some of its symptoms and causes and effects were of the crudest and most automatic kind. An animal was found unable to maintain the erect position either partially or wholly. Apparently, the difficulty resided in the hind limbs, or posterior to the lumbar region, ergo, an affection of the spinal cord, or its membranes adjacent and anterior to the structures wherein the loss of muscular power appeared to be, as in paraplegia; for which nothing more potent and desirable, on the whole, than counter-irritation, in form of mustard and hot water applications, could be suggested. For internal remedies, copying after others, of course, I used aloes, belladonna, gentian, carbonate of ammonia, etc., etc., but I relied on the external applications to help me more than all the rest, and had them applied with great care and regularity. There was, I believed, a condition of things connected with the dorsal and lumbar portions of the cord, which must be relieved in a mechanical and positive manner, and this was believed to be the way to do it. If conditions were favorable, and the disease did not "creep up" to the brain, my patients recovered—some of them "after a fashion."

I cannot claim to be an observing person in many important things, but I had not a long acquaintance with this disease, before becoming aware that a good deal had escaped me in comprehending its true character, and in the recognition of some of its peculiarities. One of the first errors I found I had made, consisted in localizing the disease where only a part of its effects were shown.

Others I might mention, but as some of my readers undoubtedly have had cause to modify their views concerning some such subjects, they, perhaps, can imagine that I might confess more than I have already. Now how does the malady present itself compared with the superficial ideas which I held concerning it. To be sure, the animal drags the toes, and is unsteady on the hind limbs. So he is when ready to fall dead from exhaustion resulting from colic or other disease. But are the effects of this disease not apparent in the fore limbs as well as in the hinder ones? Certainly, in most cases, they are. There is the same lax, useless condition, proportionately, as we see in influenza, or other debilitating diseases, where the weakness is apparently confined to the hind limbs, but which really is general. Instead of local paralysis, have we not in such cases of spinal meningitis a general loss of muscular power? In describing symptoms, the respiration is said to be normal, unless it be noticed to be hurried or labored. Has it not often been observed to be slower than normal, and less vigorous?

There is manifestly an impaired condition of the digestive organs, a devitalized condition of the excretory organs, the heart's action is modified, a general loss of vigor, and a peculiar expression of countenance mark the disease. The pain is not sufficient, in most cases, to make it noticeable that there is any, unlike the ordinary cases of paraplegia, in which the animal, particularly in fatal cases, thrashes about, and shows symptoms of the most intense suffering. The peculiar motion, as of running like a race-horse, with the fore legs—the hind ones remaining immovable—in horses prostrate with that disease, is familiar to all practitioners. I have never seen it in spinal meningitis.

We have in cerebro spinal meningitis, a disease distinct and different from all others. That it is produced by a specific poison, I have no doubt. If we had that poison we might produce the disease by inoculation at will. Prophylactic treatment, so far as belladonna is concerned, in my opinion, prevents attacks by overcoming effects of this poison, and not by placing the system in a condition to resist it as might be supposed. There are many, of course, that would not imbibe the poison without any treatment, and so far only, as I have said, can I see that prophylactic treatment prevents disease of this kind. If otherwise I shall be pleased to hear it explained.

That the disease is confined to illy ventilated and badly drained stables, or that it prevails to a greater extent in such than in others that are well aired and drained, has not been my experience. The greater number of cases I have had this year, have been in private stables where

the sanitary conditions were all that could be desired. And in this connection a word or two concerning a common error may not be uninstructive. It has sometimes been taught, and very generally accepted, that an excess of carbonic acid in the air of a room or a building is the condition favorable for the production of disease. It is extremely doubtful if this is true. According to reports of experiments by Sir Humphrey Davy, a large percentage of carbonic acid may exist in respired air without producing positive physiological effects to the person inhaling it, and the percentage, even in the most crowded and illy ventilated apartment will seldom be found to exceed 0.5 per cent. So that a person or an animal might possibly receive the poison producing spinal meningitis, or other contagious disease, on the top of Mt. Washington as in what is considered the vitiated air of city stables or dwellings.

Our methods of arriving at conclusions in many cases have been hasty to say the least, and a great many accepted theories about which we have no doubt, because we do not think sufficiently, will not stand investigation and inquiry. I do not suppose that a difference in the proportions of oxygen, hydrogen, or carbonic acid in respired air would favor the carrying of poisonous gases, vapors or dust, any more than a preponderance of ether, oxygen or hydrogen in the water of mineral springs affects their medicinal qualities. Possibly, through a chemical analysis of air, we may some time ascertain some of the real causes of pestilence which are not already known.

The result of three post-mortem examinations of cases of cerebro spinal meningitis have failed to show me any softening or alteration in appearance of the spinal cord or its membranes, except of the medulla oblongata and its membranes. In all were the dorsal and lumbar portions apparently free from the effects of any disease. In the last one at which Mr. C. P. Lyman, of Springfield, was present, we found undoubted pus corpuscles in the pelvis of the kidneys, and under the piamater of the brain, portions of which were the same day examined by Dr. Treadwell, of Boston, under the microscope, at which examination we were also present. In Prof. Williams' work on Veterinary Medicina, may be found a very interesting article from the pen of Mr. Lyman, which contains views regarding the etiology and pathology of the disease, similar to those expressed by Prof. Large. I have thus far had twenty cases of cerebro spinal meningitis this spring, of which all have made good recoveries, except one which died the second day. To none, except that one, has any external application been made, except additional clothing in cases of clipped horses.

If any result is produced, I am of the opinion that hot water, mustard and other counter-irritants applied to the lumbar region do harm rather than good. My treatment has consisted of a full dose of cathartic medicine, followed by a powder composed of: Atropin (Keith & Co.'s), grs. iii; arsenic, grs. ii. placed on the tongue three times a day until convalescent.

This has served me very well as will be seen by the results obtained. I do not claim that it has any particular merit, or that it is particularly scientific, or that some of these cases "might not have recovered without any treatment," but such as it has been I am pleased to relate it.

VETERINARY EDUCATION.

By D. McEACHRAN, F. R. C. V. S.,

Principal of the Montreal Veterinary College.

[*Continued from Page* 50.]

In the last number of the Review we intimated that we would refer in this to the profession as taught in Canada. Occupying the position which I do, and having from the commencement been intimately connected with Veterinary education in this country, I feel it a somewhat delicate duty to criticise the curriculæ of our Veterinary Colleges, more especially as that criticism will necessarily be, in some respects, unfavorable. Unpleasant as the duty is, the interests of the profession demand that we should let no obstacle debar us from a fearless exposure of what we know to be wrong, and an equally public recognition of true merit wherever found. I trust, therefore, that the following remarks will be credited to a desire on the part of the writer to bring about reforms in our Canadian schools which, as the sequel will show, are urgently demanded.

It is not my intention to deal with the early struggles of the science in this Dominion; suffice it to say that the history of Veterinary education dates from 1861, when Professor Smith commenced to give a six weeks' course to the agricultural students attending Professor Buckland's lectures at Toronto. Having been associated with Mr. Smith for three sessions at the commencement of the school, I am in a position to testify to the many difficulties and disadvantages under which the

school labored, as well as to the great credit due to Professor Smith for his perseverance and success in overcoming these difficulties.

Every allowance must be made for the imperfections incidental to the establishment of a school to teach a new science in a new country. Nor do I think the same high standard of education was necessary in these days, short as the time seems. The rapid increase, not only in numbers but also in value of our agricultural stocks, consequent on the progressive development of the resources of the country, by the opening up of the Provinces by railway and steamboat communication, should naturally have led to a corresponding improvement in the curriculum and requirements of the school, at which young men were taught how to manage these animals in health, and treat them when laboring under disease; but I am sorry to say we do not find such to have been the case. And while I would desire to give Professor Smith a very great deal of credit for what he has done for Veterinary Science in Canada, I would not be doing my duty to the profession were I not to give him also his just share of censure for refusing persistently to make reforms in the curriculum of his school, which the advancement of the science has long ago demanded.

In a letter dated June, 1870, from a member of the profession, holding the degrees of M. D. and M. R. C. V. S., then residing in Toronto, who examined the students weekly at Professor Smith's request, during the session of 1868–9, I am informed that, though the students attended a few lectures on Physiology by an eminent teacher, they knew next to nothing of the subject; that they attended no lectures on Elementary Chemistry, and were equally ignorant of that important study; and he further informs me, that Professor Smith, on being remonstrated with, declared, that *a knowledge of Chemistry would be of no use to them in practice.* In consequence, the gentleman referred to, declined to act as an examiner, or accept an invitation to the annual dinner, protesting against sending any one of the students of that year to the country as fit to practice—yet we find that no less than seven received the diploma of the Toronto School that year. Since then, there have been some able young men entered this school—men who had been accustomed to read and study—and men who, had they been afforded proper opportunities, might have become pillars in the science. Some of them who, by their own exertions, attained very creditable degrees of proficiency—and as remarked to me by one of the examiners who assisted at the last examination in Toronto, made them (the examiners, mostly former students) blush for the low standard on which they themselves had been graduated.

These men, however, are the exception, as no qualifications are necessary for admission except the payment of the fees, there being no matriculation examination. Students from other colleges can enter here on their own statement of having attended lectures elsewhere, and without producing certificates from the college or Professors under whom they assume to have studied; in fact, such men are encouraged, as may be seen by referring to last issue of the REVIEW. Were this practice confined to educated men, as I believe the gentleman there referred to is, the injury to the profession would not be so great as to grant diplomas of qualification to persons wholly incapable of acquiring sufficient knowledge of science to pass any examination, instances of which can be cited. And it is much to be regretted that discontented students, who doubt their capability of graduating at other schools, or who fail altogether, can receive a ready welcome and assurance of success at Toronto.

In the prospectus for 1876–77 we read, "The winter session begins from the 20th to the 25th of October, ... and *junior students can enter at any time until January.*"

"Students intending to prepare themselves for the practice of the Veterinary art as a profession, are required to attend two sessions at least."

Now, suppose a student enters in January (few will come in October if they may as well enter in January), what benefits can he derive from, say, for instance, Dr. Croft's lectures on Chemistry, which have been in progress since the beginning of October, would he not be in the same position as if he were to commence arithmetic at quadratic equations, instead of the multiplication table? What better position is he in with relation to Physiology, Anatomy, or any of the other subjects?—yet this counts one session. Again, supposing he enters his second session in October, and even does not take advantage of the December examination (as the prospectus leads us to believe he can), but attends on until the April one, can it be possible for any young man, no matter how studious, to acquire more than a mere rudimentary outline of the abstruse sciences of Anatomy, Chemistry, Materia Medica, Physiology, Pathology, and all the collateral branches of study which are said to form the subjects of examination?—the first three months of the nine forming the two sessions required being lost, as we have seen, in a great measure.

Suppose, even, that they could pass a fair theoretical examination, how is it possible, in the fifteen months over which their pupilage ex-

tends, that they can acquire practical acquaintance with even the ordinary details of practice?

It is a notorious fact, however, and much to be regretted, that even this short course is not in all cases required.

Great improvements have lately been made in this school by the enlargement and improvement of the buildings, especially the dissecting-room, and the addition of a large room for a museum as well as a room for a library.

It will be a matter of surprise that, although this school has been in operation for fifteen years, almost no attempt has been made to collect the usual requisites for illustrating lectures, such as anatomical or pathological specimens, models, or diagrams; no library, or any attempt at commencing one, has been in existence till last year, when the government, recognizing the importance of a museum and library, granted $2,000 to be expended in books, models and diagrams. It is satisfactory to know from the last prospectus, that, "the museum, when completed, will be the largest Veterinary Museum in Canada;" but it would be more so if we had some idea when it will be completed; for if the progress made in this direction is not more active during the next fifteen years than during the past, young men of the present day will derive but little advantage from it.

With the above facts before us, we can understand the reason why the prospectus informs us that, "we deem it unnecessary to give an extended and complicated description of the synopsis of lectures more likely to mystify than enlighten intending applicants." This must mean one of three things—first, that the class of students expected are uneducated, or that they would be capable of understanding the nature of their studies; secondly, a course so very technical and scientific as would deter intending students from attending them; or, thirdly, such an arrangement of lectures as is incapable of being synoptically indicated in a prospectus.

The latter, certainly, must be the case, if it is arranged to suit the convenience of students entering any day from October till January. As a sequence to the above, we find the advertisement of this school reading as follows:

"The Ontario Veterinary College is attended by the largest number of pupils, and has the greatest number of graduates in successful practice of any Veterinary College in America. Apply to Dr. Smith, V. S."

Such is the Ontario Veterinary College. I sincerely wish I could have been more favorable in my criticism of it; but the dogged per-

sistence of those at the head of that school to prevent all progress, to continue a course so inefficient and detrimental to the best interests of the science, compels me to state facts which can be supported by the best of testimony, in the hope that public opinion will induce them to make those changes which have been privately urged upon the Principal by his best friends for many years, and for the non-compliance in which the only excuse given is the fear of losing a few students from their classes.

History is said to reproduce itself, and in a small way we find a reproduction of Coleman's conduct in retarding the progress of the profession through illiberal motives, without the slight counterbalancing high tone which Coleman strived to give it.

That Professor Smith is capable of raising the educational status of his school to its proper requirements no one who knows him will doubt, and the liberality and willingness of the medical gentlemen of Toronto to extend to him an enthusiastic co-operation leaves him no excuse for not doing so is also well known. The necessity for an extension of the curriculum has been frequently urged on him by professional friends—former students and experienced agriculturists. Professor Liautard, as Principal of the American Veterinary College, and the writer as Principal of Montreal Veterinary College, have both urged, privately, on Professor Smith the necessity for improvement in his course and length of study, asking him to meet us for the purpose of making the necessary improvements in all the colleges, but in each case with a refusal to do anything whatever, giving the writer distinctly to understand that he would do nothing whatever that would risk lessening the number of paying pupils, the interests of the profession as a profession being to him a secondary matter.

It now remains to be seen whether public opinion will induce the Toronto School to adopt a standard of education corresponding to the importance of the science in relation to the great stock interests of Canada and the United States, or whether students will be attracted by the number of graduates sent out by the school, without any reference to the standing of the school as an educational institution.

The Montreal Veterinary College was established in 1866 on the removal of the writer to that city, under even greater disadvantages than at Toronto, owing to Montreal, and the Province in which it is situated, being a French settlement, except from the city itself, where the English language is spoken by nearly half of the population ; but few pupils could be expected from that Province unless the lectures

were given in French. Accordingly, we find that the progress made in numbers attending this school for a time was not very encouraging to the promoters of the enterprise. Notwithstanding all these obstacles, the curriculum adopted extended over three sessions, of six months' each, being one session more than was then required at either London, Edinburgh, or Glasgow, and embraced Botany or Zoology, Chemistry, Institutes of Medicine (including Physiology, Histology and Pathological Anatomy,) the full course of the Medical College—Veterinary Materia Medica, Veterinary Anatomy, and Veterinary Medicine and Surgery.

As above stated, three full sessions had to be regularly attended before they were allowed to go up for the final examination.

The Board of Examiners consisted of Professors of McGill University, and Veterinary Surgeons, who were appointed by the Board of Agriculture.

For five sessions the lectures were delivered at the Medical School; but on the removal of that school to the new buildings near to the University, for the convenience of teachers and pupils, a lecture room was rented down town, which answered the purpose until the present college was built.

The progress made has been extremely satisfactory; notwithstanding the difference in length of time required to study, and greater cost than at Toronto, twenty-two pupils attended the full course last session (eight being from different States of the Union), seven of whom passed the examinations, and were admitted members of the profession.

At this school, as well as at New York and Toronto, no matriculation examination has been required until last session, when all the French Class had to pass an examination in Reading, Grammar and Geography, one being refused admission for inefficient education. That this has been an injury to the profession I am well aware; but although I have repeatedly urged on the Toronto School the necessity of it being instituted, Professor Smith could not be induced to do so; consequently, were we to insist on matriculation as well as nearly double the length of time, it would have had the effect of sending many of the students to Toronto.

Now, however, that the American Veterinary College has acceded to the proposition urged by their esteemed Principal, a matriculation examination will be required on entering at Montreal as well as New York; and it is to be hoped our friends at Toronto will soon follow the example.

At Montreal, a course of instruction in French has been added, similar in all respects to that in English, which has been heartily supported by the Government and people of the Province; and it is expected that before long it will equal in numbers the English department.

This school possesses a valuable museum, containing skeletons of nearly all the domestic animals—dissections, morbid specimens—models by Auzox, of the eye, ear, larynx, etc., etc.

The lecture room is furnished with diagrams, illustrating every subject lectured upon.

The library contains a nucleus of ——— volumes, embracing most of the English and French standard works, which are being constantly added to.

In addition to these two schools, another has been opened in connection with the Agricultural College at Guelph, Mr. E. A. A. Grange being Lecturer. I understand that it is not intended to grant degrees from this school other than as forming part of the general agricultural curriculum.

Veterinary education in Canada has been greatly assisted by the formation of a Veterinary Medical Association in connection with each of the Colleges, at which papers are read and discussed to the great benefit of all attending them.

A year and a half ago an effort was made, at the instigation of the writer, to form a Dominion Association, having for its object the advancement of the science, and bringing the members of the profession together in friendly intercourse, with a view to taking steps to form a central body to promote the interests of the profession in the Dominion.

The proposition met with every encouragement in this Province, and ten members of the profession in Ontario expressed the utmost enthusiasm, Professor Smith being the only one who introduced the discordant element, indicated by the following expression: "A Dominion Association should fairly represent the views and interests of the whole profession, and not those of any particular locality."

Hence we were not surprised to receive the following resolution from the Secretary of the Ontario Veterinary Association, said to have been passed unanimously at a meeting of the Directors:

"That the Veterinary Profession in this country being comparatively a young body; and as we have recently formed a Veterinary Medical Association in Ontario, which, so far, appears to meet the requirements of the Profession in this Province, it is not expedient just now to form a Dominion Association, to become the Corporate Body of the Profession in the Dominion."

As there are eight Directors, five of whom expressed themselves most enthusiastically in favor of such a much-needed association, we are forced to the conclusion, that the "*particular locality*" from which the progressive step originated had been strongly urged against its formation; and thus the progress of the profession has been stultified for the time being.

It is satisfactory to know, however, that a more independent feeling is now being manifested; that influences are being brought to bear on the schools, and those having control of them, which, doubtless, will result in the accomplishment of much-to-be-desired changes, both in the teaching of the profession and position and privileges of its members.

[TO BE CONTINUED.]

EDITORIAL.

VETERINARY EDUCATION.

We publish, in this number of the REVIEW, the third of the series of articles on Veterinary Education that our friend, Prof. McEachran, has kindly forwarded to us, and with this last article, feel ourselves obliged, as connected with the American Veterinary College, to make a few remarks concerning what is said of that institution, so as to place it, once for all, in its proper and true light before the profession.

First of all, let us state that, as Prof. McEachran fully remarks, we are fully alive to the fact, that the Session, as carried so far to the American Veterinary College, is too short, and that we have been for a long while back endeavoring to have the course extended to three Sessions. We are happy to-day to announce that the subject has thoroughly been investigated by both the Board of Trustees and by the Faculty, and that this condition of two Sessions will soon be out of existence, as is announced in the circular of the College which has just been distributed.

As it has always been the desire of the Professors of the American Veterinary College to give to their students all that could be possibly advantageous, without any consideration for "mercenary motives or self-aggrandizement," and ambitious of improving the opportunities and facilities for the education of the class by following the progress and advance made by the Medical and Veterinary Professions; that institution, following the example set by the Harvard Medical College and the Medical

Department of the Michigan University, has taken the following decisions: The first, which will necessarily bring in the study of the profession a better class of men, better educated students, is that by which all applicants for matriculation will be required to present a certificate of collegiate or academic studies, or to submit himself to a preliminary examination; second, which establishes graded education, thus obliging the student to devote his whole attention to some special branches, instead of cramming every subject at once, and to prepare himself for an examination at the end of the Session; and the third, the requirement of attendance to three full courses of lectures, being divided into a Winter and a Spring Session, the first of five months, the second of six weeks.

These alterations do not mean perfection. For one whose course of studies were of four sessions of over ten months each, we know too well that eighteen months are insufficient to obtain the qualifications which the diplomas say the graduate possesses; but one must recollect that the American Veterinary College is chartered under peculiar laws, and that it cannot yet impose whatever good their desire may be. All over our continent our medical colleges, with the exception of two, carry on their curriculum with only two full courses of lectures. Therefore, in initiating the three new decisions, the American Veterinary College takes a step forward amongst the first of the Medical Colleges in the United States—first of the Veterinary Schools of this continent.

Now for the other objections made by our esteemed friend. He says: "Again, the oral and practical examination being by *the Professors of each department of instruction*, is certainly not to be recommended, nor will the public accept its results as being as *reliable as if they were examined by an outside and impartial Board of Examiners, unconnected with the College.*"

To this we might simply answer, as we did some time ago when the same objection was sluringly made against the faculty of the College, that this is the mode of examination of many other Veterinary institutions in Europe, and of all our Medical Colleges in America; but, besides, why should they not be reliable? We do not make the faculty of these schools the insult to suppose that, because they are the teachers, they must necessarily be indulgent, and willing to grant their diplomas to unworthy candidates. If so, cannot examiners be supposed to act wrong also? A Board of Examiners is appointed to the English, and perhaps also to a few other European schools, but we have yet to learn that a diploma is not as fully appreciated by the public, because it has

not been granted from a Board of Examiners. We believe, and are sure, that Professor McEachran does also value the diploma from a French School to be as high as that of any of the English Colleges! But let us suppose that the presence of the names of the Board of Examiners would give more value to a diploma, we will ask *where* and *how* in this country can an *outside and impartial Board, unconnected with the College*, be selected. Have we a sufficient number of educated Veterinarians to fill up the position, who would be willing to do it—yes, who could fill it? We have no hesitancy to say no. To be examiners, means to be thoroughly acquainted with the subject to examine upon, to be posted with its last advancement, discoveries, etc. And have we amongst us, with the exception of those who are engaged in teaching (and these in their specialties), members of the profession who do not feel themselves somewhat *rusty* on Anatomy, on Physiology, on Therapeutics, etc. What, then, have we to do but fall back on the recent graduates, and are they, properly speaking, *unconnected* with the College; or on outside practitioners?

What was the position of the Montreal Veterinary College at their last meeting? One of their examiners, at least, was a graduate of the School, and another, whose professional standing ought to have been an objection to its appointment, and whose name, I fear, on the diploma of that excellent institution, can be no great honor to the document.

Under this present condition, what is to be done? We would suggest that the oral examination be made public; let all the Professors of the different departments of a school meet together, and let the candidate pass his examination in front of the whole faculty; yes, in a room where all the students to be examined will be allowed to be present. This would do away with the possibility of prejudice or preconceived decision on the part of the teachers, while it would give the candidate the comfort and the confidence that he would already have had during the course. It would be but a repetition of the weekly recitations or *quizzes* which he would have had during his course of studies; merely a more severe trial; but he would know that his examination, though severe, would be carried on by those with whom he was acquainted, and whose mode of questions he was familiar with.

Of the written examination we have nothing to say—thesis, we are satisfied, is merely a matter of form for many. We believe the proper way to be, to give the student questions on the different branches and let him write upon them.

The practical examination is carried along all the year round at the attendance to hospital practice and to the free clinics.

We have received other communications relating to the subject of Veterinary Education, which will be printed in our next.

PRELIMINARY EDUCATION.

The necessity of the steps discussed by the Veterinary Schools of this continent, relating specially to a preliminary examination before matriculating to enter a school, is well illustrated by the letter which we publish to-day under the heading "Knocking at the Wrong Door." The manner in which the letter is written, its style, and all its orthography, show enough how unfit the applicant is for the honorable degree he seems so anxious to obtain. This letter was directed to the Principal of the Montreal Veterinary College—how mistaken the applicant was? And it is not the first one which has been brought to our notice; our position at the American Veterinary College has been the means of receiving many, similar to that one, and we publish it to-day to show how wrong and ignorant people, generally speaking, are, of the requirements for veterinary education. Rather than thinking to enter a grand profession like ours, the ambitious candidate who *wont stand fore the meanes*, had better turn his attention to something else which will not require *three difrent schools from difernt graduats.*

Let all schools on the continent establish the requirements already adopted in the United States, and ignorant people will soon learn that before attempting to be honored with the trust of caring for our domestic animals they must take advantage of one of the greatest institutions of our country, viz.: *free public preliminary education.*

CASTRATION OF CRIPTORCHIDS.

The Veterinary journal brings us in his advertising columns that of Prof. (?) T. C. Miles, who for some time back has been trying to bring himself to the notice of the American people for what he calls *his method* of operating on Rigling. We are somewhat surprised at the reading of the certificates and letters which the Prof. (?) published, some of which, emanating from American veterinary authorities, stated that to them the

operation is a new one. The operation is by no means a new discovery, as mention of it is made in many French works, amongst the more recent we will name that of N. Serres, of the School of Toulouse.

We have not seen Mr. Mills operate, and though his success may have been unparalleled in the archives of veterinary operative surgery, from the description which is given in one of his certificates we feel satisfied that there is, after all, no discovery in it, but merely a series of *good luck*, as all practitioners may come across in their practice, when called to perform the operation of castration.

For the benefit of our readers we give, further, the *modus operandi* of the operation, without offering any reward for a better mode of castration. Some *variations* may exist between it and that of Mr. Mills, but the general *modus operandi*, as far as we can understand, is the same.

LIVED TOO LONG.

Thanks to the kindness of one of our correspondents, Mr. Gadsden, we are able to present our readers two extracts from Philadelphia papers relating to the closing of the so-called Philadelphia Veterinary College, with the arrest, trial and conviction of Robert McClure. Incorporated in 1866 by the Legislature of Pennsylvania, this College could, no doubt, have the opportunities to succeed. But why did it fail? We have no hesitancy in stating that from our observation we are satisfied that the failure can be attributed to two causes, which will always produce the same result. The first is, that the school was established with a pecuniary object in view; and the second, that the leading members of the school were unfit for the position they were trusted with. As a pecuniary point of view, it could not succeed, as all those who are engaged in that special work well know, that there is no millions in it. As being unfit for the position, we hold that to be able to teach, to understand the requirements of a class, to infuse to others rules of conduct for life, one must have been drilled himself in the same way; he must have obtained the title to his position through that same mill. Certainly Robert McClure, the unqualified Veterinary practitioner, did not possess those requirements.

ABSTRACTS FROM FOREIGN JOURNALS.

By A. Liautard, M. D. V. S.

LESIONS OF THE BRAIN AND OF THE CARDIAL GANGLIONS IN RABIES.

A woman of thirty-two years, had her lip bitten by a dog, on the 9th of July, 1875, and she died on the 23d of September, after 2 days and half, from the eruption of the disease. On examining the nervous centres the following lesions were found: some of the cells of the medulla oblongata were cloudy, and their outlines uncertain. In the interstitial tissue of the cerebrum, great quantities of white corpuscules in the perivascular sheaths or in their neighborhood. Some of these corpuscules were situated in the pericellular spaces, and even in the protoplasm of the cells. An interesting lesion consisted in the existence of a shying substance, strongly refracting, collected, principally, in the perivascular spaces, and also in the superficial layers of the cerebral hemispheres. This substance was, here and there, deposited round the blood vessels in such quantity that these seemed to be strangulated or obliterated. In other places, it seemed to be regularly laid round the blood vessels so as to represent an epithelium. Resisting to the action of coloring substances, it remains insoluble in acids and alkalines.

In the ganglions of the heart there was thickening of the endothelium lining the sheaths of the nervous cells; and inside of the sheaths and in the interstitial tissue round elements of the size of a white globule. The nervous cells were cloudy, an appearance which concealed the nuclei more or less. In every part the nervous cells did not fill their respective sheaths, but had an empty space between them. (*Annales de Bruxelles*).

TRICHINIA SPIRALIS OBSERVED ON A DOG.

The animal was a young dog, 10 months old, picked up in the streets of Turin, and kept for experiment. He accidentally died in September.

On examination of the muscles of the tongue and of the posterior region of the thigh, a large number of trichiniæ encysted amongst the muscular fibres were found.

A trichinia, removed from its envelop, was placed under the microscope, in a weak solution of common salt, leaving it all its liberty of motion. At the surrounding temperature (23 degrees C), motions were limited; at a heat of 35 degrees to 45 degrees C. they increased violently, to stop entirely at 46 degrees. The heat was raised one degree more, and then gradually lowered to 35 degrees, and weak motions returned from 42 degrees. By a new increase of heat from 35 degrees to 40 degrees motions of elongation and contraction of the whole body were soon visible, but less marked than in the first experiment. They diminished at 42 degrees, and then ceased completely at 44 degrees.

In another experiment the author did not observed the death of the free trichiniæ only at 48 degrees C.

Observing afterwards upon an encysted trichinia, the motions ceased at 44 degrees, and reappeared but weakly at 30 degrees. The cyst being torn and the trichinia free, the motions showed themselves again, disappeared at 45 degrees.

In another experiment they stopped at 44 degrees. In conclusion the author says that a heat of 48 to 50 degrees will kill the muscular trichinia. (*Archives Vétérinaires.*)

CONTRIBUTION TO THE STUDY OF THE EXPERIMENTAL AND COMPARATIVE PATHOLOGY OF GLANDERS.

The author observes that the spontaneous production of the virus of glanders is yet to be proven. The transmission of the disease takes place by contagion; but it is not necessary, according to him, that the virus deposited upon the skin or the mucous membrane, produce on it a local lesion, starting point of a generalization. Most of the time the disease is due to an infectious miasma in suspension in the air which, penetrating into the lungs, determine a primitive poisoning of the blood with specific secondary products, or a primitive localization in the lungs followed by a general infection. Autopsies of horses prove this: in some ulcerations of the nasal fossœ and cutaneous lesions are missing, while in others lesions are found in the larynx and in the lungs. Consequently this virus is at the same time fixed and volatile. It is not true that it always affects the nasal mucous; out of 52 post-mortems of glanders and farcy, 5 times the nose was found free from lesions. Still this is the seat of predilection for these lesions, whatever may have been the mode of infection of the animal.

The author made 2 inoculations of virus of equine glanders, one upon a rabbit (on the ears), the other upon a goat (injection in the peritoneum). In both cases glanderous eruption took place upon the nasal mucous, evidently metastatic in origin. This may explain those cases to which, weeks and months of incubation were attributed, and in which the disease existed a long time, in a latent form, the lesions being deeply situated. Horses, with all appearances of health, may infect others through atmospheric air; and these for a long time, may present nothing of particular, until nasal ulcerations, cutaneous lesions and those of the glands would appear. These are the so-called spontaneous cases. Clinical observation confirms these experimental pathological facts: Bagge, out of 107 horses destroyed as affected or suspected of glanders, 10 had marked lesions of the nose, 13 had lesions scarcely visible, 53 pulmonary nodosities and ulcerations of the respiratory canal except the nose, 31 presented nothing.

According to the author, it is impossible to establish a point of identity between glanders and tuberculous disease: inoculation always gave negative results, and the nodosity of glanders differs much from the miliary tubercle. This has a lymphoid bloodless structure; the other is often vascular, and is composed of lencocytes, generally with large cells. By inoculation glanders is easily distinguished from affections to which it is identified and placed on a like nature, and its specifity is positively established.

Then the author speaks of the transmission of glanders to other animals, and especially the rabbit, sheep and the goat. The two first, like man, are very susceptible to it, and may spontaneously be infected by sojourning in stables occupied by glandered or farcinous horses It is not so with the goat. The dog, on the contrary, is not predisposed to contract the disease; after inoculation, generally, only a local affection is exhibited. In one case, Nordstrom saw a dog contract the disease after eating the meat of glandered horses. In cats the disease shows itself in two ways. It has been also observed in wolves, in lions and in the mice and guinea pigs. According to Spinola, pigs are susceptible to contract the disease, but, as in cattle, inoculations (Gerlach and Stiffen) have not produced general infection. (*Annales de Bruxelles*).

COLOTOMY IN THE HORSE.

Mr. Felizet has succeeded in extracting from the floating colon a calculus of the size of a child's head, through an incision made in the

flank. This operation, remarkable by its boldness and specially by the result following it, must encourage the practitioners to perform it in similar cases. It proves, also, that the dangers of traumatic peritonitis are not necessarily always an objection to the attempt for relief.

These are the principal points of the operation: animal cast on the left side, right posterior leg secured extended backwards, longitudinal incision through the skin of the flank, tearing of the subcutaneous muscular layer, careful incision of the peritoneum, introduction of one hand, flat ways, to prevent the exit of the intestines, introduction of the other in the rectum to grasp and push the tumor through the opening, its extraction by incision of the coats of the intestine, suture of that organ well cleaned, and then carefully pushed back in the abdomen, suture of the fleshy and cutaneous edges of the wound. Phlebotomy, light mashes, gruels, laxative and opiates. Radical cure after 15 days. (*Journal de Zootechnie*).

But a short time ago, we had the opportunity to perform a similar operation on a large bloodhound dog, in which an enormous mass of hardened fœcal matter was producing serious complications accompanying an obstinate constipation of two weeks' standing. The animal died the same day from the shock of the operation. Mr. Felizet was more fortunate as he relates two similar cases which recovered without difficulty. (Ed.)

GASES IN THE STOMACHS OF RUMINANTS.

Mons. Reiset has recently been investigating the nature of the gases found in the stomachs of cows and other ruminants that had become "blasted" from over-feeding on green clover and similar foods. Gas present in the rumen of a cow that died scarcely two hours after access to a clover field, was found to consist of 74.30 per cent. carbonic acid, 23 46 per cent. carburetted hydrogen, and 2.21 per cent. nitrogen. Neither oxygen nor sulphuretted hydrogen could be traced. In the case of a "blasted" sheep, also, 76 per cent. of carbonic acid was found. From these observations, Mons. Reiset is led to suggest the employment of alkaline bodies for remedies, amongst which he specially recommends ordinary burnt magnesia. (*Veterinary Journal.*)

BITES OF A RABID DONKEY TO A CHILD. DEATH OF THE ANIMAL.

During the incubative stage of hydrophobia, a donkey bit a child. At the suggestion of Mr. Laguerriere, the wound was not cauterized,

and the child escaped. The donkey died. From the principle that a rabid animal can, during the incubative stage of the disease, communicate it though it may present all the appearances of health, the author recommends the cauterization after the bite of any *carnivorous*, no matter how slight. At the autopsy, lesions of the lumbar and sacral nerves were found, viz., plastic organization of serosity increasing the size, and changing the coloration of the nerves. These lesions were also found in dogs who had died at the last period of the disease. (*Archives Veter.*)

INTERESTING POST MORTEM.

A horse died from hemorrhage following rupture of the liver. At the autopsy an enormous clot was found in the abdomen; on the posterior face of the liver a laceration near the veina portæ; and all round, a mass of brownish, very small spots, having in its centre a long, filiform, stiff, hard body which proved to be the barbs of barley seed. (*Archives Veterin.*)

TRANSLATIONS.

By Dr. Osler, of McGill University and Montreal Veterinary College.

DIPHTHERIA IN THE CALF.

Dammann records the history of an exceedingly interesting epidemic of this disease in calves—a new affection in these animals, and one capable of transmission to man. The author holds that the malignant catarrhal fever of cattle is not to be regarded as diphtheria.

The disease broke out in the spring of 1875, among the calves in the village of Ludwigsburg, and proved fatal in nearly every instance. In the spring of 1876, the disease having broken out again, the Inspector of the place consulted Prof. Dammann on the subject, and he, suspecting its nature, requested that the first animal that died should be sent to him for dissection. The opportunity soon arrived by the death of a three weeks' old calf; when, on examination, it was found that the affection was true diphtheria. A thick, grayish-yellow membrane extended over the anterior part of the hard palate, and lined the mucous membrane in the region of the posterior nares, being prolonged into these cavities and their sinuses. A similar membrane covered the inside of the cheeks. On removal, the mucous membrane was found to be

destroyed by the infiltration. The larynx and windpipe were not implicated. The lungs were edematous and contained, especially in the anterior lobes, a number of purulent deposits. On the skin of the clefts of the hoofs of both front feet, a thick, diphtheric membrane existed.

On visiting the place, five calves were found affected—two in the early stage, and two others seriously ill, while the death of the fifth was hourly expected. All were feverish, depressed and feeble, appearing stiff in their limbs, and disinclined to stand up. Saliva flowed from the mouth, *and there was loss of appetite. The cheeks of several were swollen.* Cough was an occasional symptom. Two of the calves were sent to Eldena in order that the course of the disease might be studied, and its contagiousness tested. They were put in a pen, and with them was placed a three days' old calf. One of the above animals was not put under treatment. It was weak, salivated, had a yellowish discharge from the nose, a feeble cough, and copious diarrhœa. On the back of the tongue a thick, yellowish layer could be seen, which, subsequently, extended towards the fauces. Under the gradual increase of these symptoms the animal died on the sixth day. At the post-mortem there were found diphtheritic colitis, scattered areas of consolidation (some of which were purulent,) in both lungs, and extensive diphtheritic patches in the throat and mouth; on the latter cavity affecting chiefly the tongue, the back part of which was covered with a thick membrane, beneath which the mucous and muscular tissue were to a certain depth destroyed.

The other calf was treated with salicytic acid (30–40 grs. daily), and recovered in about three weeks. The attack did not appear so severe as in the first calf. Five days after being placed in the pen with the diseased animals, the healthy calf showed signs of the malady, and had the local and general symptoms as above described; the membranous patches being well marked. It was also treated with salicytic acid, and recovered in five weeks. In all the cases numerous bacteria and micrococcie were found in the membrane, and in the discharges from the nose and bowels.

Severe cases proved fatal in four to five days; in others the duration of the disease extended over three weeks, and in these the onset of pneumonia frequently determined the fatal result. In none of the cases observed was there any affection of the kidneys. Very young animals alone appear susceptible to the disease; no instance was met with in half-grown or adult beasts. In both epidemics at Ludwigsburg almost every calf attacked died. The treatment recommended consists in syringing out the mouth and throat with a solution of salicytic acid,

giving the same internally, and, when possible, removing the false membrane, and penciling the base with two per cent. carbolic acid. The contagious nature of the affection was proved by the fact of the healthy calf taking the disease when placed with the others. Experiments further demonstrated that, by placing bits of diphtheritic membrane either in the nose or beneath the skin, the disease could be produced in lambs and rabbits—results similar to those obtained with the false membrane from man. An exceedingly interesting fact is the probable transmissability of the diphtheria of calves to man. The Inspector above referred to, who had charge of the diseased animals, sickened with an affection similar in all respects to ordinary diphtheria ; the servant also suffered from sore throat, swelling of the neck, etc., but not so severely. These were the only individuals who were brought in contact with the calves.

A beautiful colored plate accompanies the paper, showing the yellowish membrane upon the tongue, palate and cheeks. (*Condensed from Deutsch Geitschrift f. Thiermedicin, Bd.* 111, *Hfts.* 1 *and* 2.)

ON THE DURATION OF LIFE IN ENCAPSULED TRICHINIÆ.

By Prof. Dammann, of Eldena.

Many observations have been published on this subject in the last 16 years. Thus Groth described a case in Altona in which it was probable that the migration of the parasites had taken place 7 or 8 years previously, and it was proved experimentally that the worms still lived. In a case of Tungels, Virchow thought that the infection had taken place 13 years before, and yet the parasites were capable of development. Still later Klopsch published the case of a woman in whom he believed the trichniæ had remained alive in the muscles for 24 years. In all these cases no positive proof of the age of the trichniæ could be obtained ; for, being found accidentally post-mortem or during an operation, it was only on the ground that the individuals had had a peculiar disease 8, 13 or 24 years previously, that the migration was supposed to have taken place at that time.

The author relates an instance of long encapsuled life of trichiniæ in a pig, the time of their migration being accurately known. The animal was fed with flesh containing trichiniæ in November, 1864, and in February, 1865, when seven months old, sent to one of the experimental stalls of the Institute of Animal Physiology in Eldena, in which it has

remained isolated ever since, being taken out only when portions of flesh were wanted for examination. No subsequent feeding with trichiniæ occurred, and an accidental infection by rats could be, with tolerable certainty, excluded. Rats were never seen in the stall, which has an asphalt floor and well plastered walls; the presence of cats kept them at a distance; moreover, the author had never found trichiniæ in a large number of rats examined.

On the 3d of February, 1875, and the 12th of February, 1876, portions of muscle were excised from the region of the shoulder, and on both occasions microscopical examination showed the presence of encapsuled trichiniæ. Rupturing a capsule with a needle gave exit to a worm, which, on slightly warming the slide, executed lively movements. Portions of the muscle last excised were administered to two rabbits, one of which already had old trichiniæ in its muscles. Eighteen days after, the muscles of both animals were crowded with young, recently-migrated parasites. Thus the trichiniæ in this pig had, for somewhat over 11 years, retained their vitality and power of development, and the supposition regarding the length of life in encapsuled worms is, by this experiment, satisfactorily confirmed.

A point of some interest is that in spite of the lengthened sojourn of the worms in the muscles, they were not surrounded by true calcareous sheaths, but possessed somewhat opaque capsules, scattered over with dark granules, through which the outlines and general structure of the worms could be plainly seen. Complete calcification of trichiniæ capsules has not yet been found in pigs, which was believed to depend upon the fact that the animals were killed before the process supervened. Several years, at least, are required, but in this instance 11 did not suffice. The food of the animal consisted chiefly of peas and potatoes. The author raises the question whether it is not a peculiarity in the pig that entire calcification of the capsules does not, as a rule, occur. Measurements proved that no appreciable change in the density of the capsules had taken place in the year between the two last excisions. (*Deutsch Zeitschr. f. Thiermedicin, Bd.* 111, *Hfts.* 1 *and* 2.)

REPORT OF CASES.

CASES TO SERVE TO THE HISTORY OF FRACTURES.

By A. Liautard, M. D. V. S.

[*Continued from Page* 65.]

C. Dislocation of Patella—*Fracture of Femur*—Dislocation and False Articulation—Destroyed.

On the 10th of July, 1876, I was requested to visit a horse lame for the last two months; he was in the country, some thirty miles from New York, and was found one morning in the same condition as at the time of my visit. A practitioner called on the day of the injury, prescribed frictions of tinct. of iodine over the stifle joint, where he located the lameness.

When I saw him his condition was as follows: his left hind leg is stretched backward, resting on the front of the toe, without flexibility at the stifle joint or at the hock. The animal in walking drags his toe along, carries his leg in abduction, and by a jumping movement on the right leg would then carry the left extremity forward. There is a slight atrophy of the gluteal muscles. The ischio-tibialis externus is projecting outward and on the outside of the stifle, the patella is readily felt surrounded by plastic exudation, and having but a very limited facility for motion. By seizing the entire mass with the hand a slight up and down motion can be produced with the patella. The general condition of the patient is otherwise healthy.

Diagnosis—Dislocation of the patella with adhesions.

Prognosis—Doubtful. *Treatment*—On that day the animal was cast with some difficulty, and after much struggling he was partly brought under the influence of ether and chloroform mixed. I say partly, as having no assistant, and the people around being much timid; between giving the anesthetic and trying to reduce the dislocation, I was unable to produce perfect relaxation, and after two hours of hard efforts I gave it up.

However, at one time of the operation, and when the anesthesiæ was probably greater, I had perceived that the patella was more movable, that I could partly flex the femoro-tibial joint; and from this I concluded that there was indication for another attempt. I left

directions to have the stifle well fomented with hot water, and well manipulated two or three times a day, and reported to my employer suggesting the propriety to have the horse brought to the College for treatment.

On the 26th, he entered the Hospital, pretty much in the same condition as when I saw him on the 10th. Two days later, kindly assisted by Professor Robertson, Mr. Hopkins and some students of the College, the animal was again cast, fully etherized; but though we worked well for over an hour and a half not the slightest improvement on my first attempt was noticeable—indeed, I thought it was not as good. The animal was allowed to get up, and the owner, informed of our failure, decided to have him destroyed, which was done on the 18th of March, a little over three months after he received the first injury.

On that day there was no change in the general conditions—action was the same—the upper extremity of the femur was more projecting, which is attributed to the excessive atrophy of the muscles.

Post-Mortem Appearances. Careful dissection of the muscles of that region shows that they are healthy, with the exception of the biceps femoris, which has undergone fatty degeneration, it seems retracted and holds the patella outward; the ligaments of the stifle joints are all in statu except the internal band of the anterior capsular, which is entirely torn ; the articular surface of the femur shows that the cartilage on the inner border of the trochleæ is thinned and congested. Had the thicker portion of the biceps femoris been divided, probably the reduction could have been obtained.

But that was not the only injury to be found. On looking further for the condition of the gluteal region, there were found lesions of the hip joint proper, which, undoubtedly went back to the time of the first injury.

The whole mass of the glutei muscles is atrophied, the deep one specially; the gluteus parvus is surrounded by a thick, plastic effusion. The inferior and posterior muscles of the crural region, obturator externus, Pyriformis, Geminii, small coxo femoral, square cruralis, cannot be dissected, they being also engorged, thickened with the same effusion, more or less organized.

Through this dense mass, a thick membrane, kind of capsular ligament, is found and cut through ; this uncovers the head of the femur, which is diseased, ulcerated upon its rim, with thin, ulcerated cartilage, but also with a fracture! extending from upwards downwards in a straight line, parallel to the long axis of the bone. The sides of this

fracture on the femur is flat, smooth here and there, granulating in some places. Where is the other piece of the bone? All that can be found is a small bony piece, imbedded with the thickened tissue surrounding the joints. The cavity of the acetabulum is almost destroyed; instead of it, its surface is smooth, corresponding in shape to that of the femur, at the upper part of which is the attachment of the capsular ligament already referred to. The inter articular ligaments could not be dissected.

In other words, there was a fracture of the head of the femur with dislocation at the hip joint, and commencement of ankylosis through the bony organization round the joints, which would have been complete had the animal lived longer.

D. Comminuted Fracture of Pelvis—Internal Hemorrhage—Death.

This was a bay horse, about sixteen years old; he was driven about two miles after leaving his stable, and stopped in the middle of the street. While standing his mate slipped and fell, but in so doing threw him down; being unable to get up he was brought to the Veterinary College in an ambulance some four hours after.

Condition on admission. Pulse weak, 48; respiration labored, numbering 22; while down he groans and strains to rise; left eye (upper one) dilated; cheeks flabby during respiration. The animal attempting to raise himself a sling was passed under him, and he was assisted to his feet. It was found then that the left hind leg was powerless; the anterior external angle of the ilium was much lower and farther from the median line than its fellow. Upon rectal examination the sacro-iliac articulation was found to be ruptured, a fracture extending the entire length of the pubic symphysis with a part running from the acetabulum to the obturator foramen.

While standing for examination the animal trembled violently, the pulse became more rapid and weak, the pupils more dilated, and being lowered down he died within ten minutes afterwards.

Post-Mortem.—The tissues in the internal femoral region were filled with blood; the pelvic cavity and its contents were surrounded with clots also; the floor of the pelvis being broken in about twenty pieces, with the main points already given above.

VARIETIES AND NEWS.

KNOCKING AT THE WRONG DOOR.

The following extraordinary letter, received by the Principal of the Montreal Veterinary College explains itself. For decency's sake we omit the writer's name :

Fostoria, O. March the 19th, 1877
Montreal Canada

Dr Sr.

i thought i would drop you a few lines in regards To Vetrinery practis i have Ben docktern horses for the Last two years and would like your tearms and know how much it would cost mee To get a dipluma i could come and stay a short time But probley could not stay the Lench of time required but Probley you could give me some Sadsfactian by having the meanes now i cane make as much money without one as with it but i would like To go in some large Citey and Doe buysness i am red up on the horse purty faire but i ame a maried mane and cant aford to spent much time in College but have the money It i cane get a dipluma In a short time you cane right mee and Let mee know your turmes please anser This by return mail i have taken three difrent schools from difernt graduats From diferent Collages and one of them mean was From your College i have Ben with him six months—

Please answer and give mee your terms i want one and wont stand fore the meanes To get it Yours truley

CASTRATION OF CRIPTORCHID HORSES.

By Criptorchids are understood the animals in which one or the two testicles have remained in the abdominal cavity, or have not passed through the inguinal canal. This anomaly is known also as monorchid, enorchid and, wrongly, anorchid, as the testicles are only concealed, but not missing.

To the surgical point of view instances of criptorchids in solipeds are furnished by Mr. N. Vanhaelst, Belgian Veterinarian, in 1846; Goubaux in 1847; Marrel in 1847; Brogniz in 1845, and by many others.

Though the condition of criptorchidy may be divided into four positions, the two following ones are generally admitted: In the first,

the testicle is floating in the abdominal cavity; in the second, it is partly engaged in the inguinal canal.

This distinction is not without importance; in the first case, the organs are floating in the abdomen, suspended by a fold of the peritoneum; they are soft, small, of a modified texture, and the produce of their secretion is free from spermatozoids; in the second, the testicle possesses all the conditions of those of the active animal, and, besides, the position of the testicles will also be of a great importance, as it will decide of the possibility and of the prognosis of the operation.

Mr. Vanhaelst describes the operation as follows: The animal being properly secured, upon the lateral parts of the scrotum, at the point, where, in normal condition, the testicle would be found, a longitudinal incision is made, long enough to allow the introduction of the hand; after that incision, the layer of yellow elastic tissue following, and situated under the skin, is also divided; then the hand is introduced into the opening, the fingers being brought together, as when the hand is introduced into the rectum or the vagina; they are pushed towards the inguinal ring, lacerating the cellular tissue. Reaching the ring, the index is stretched and passed between the testicle and the canal proper, detached from its attachments, and by a slow but steady pulling is brought outside of the sac; a ligature is passed around the cord, which is firmly secured; the edges of the skin are then brought together, and the animal allowed to get up.

After the fourth day the ligatures of the skin are cut off; that which was applied upon the cord soon drops off carrying along the testicle, the suppuration is established, and the case progresses as usual. Instead of ligature, if possible and if the cord allows it, an ordinary clam is applied, and thus is the operation transformed as one on a normal animal.

Gourdon mentions another mode, which consists to look for the testicle into the abdomen by an incision made in front of the inguinal ring, on the sides of the sheath, and including all the abdominal walls; but too dangerous in its sequelae it would scarcely be put in practice, except in case of experiment.

At last the *Recueil de Medecine Veterinaire*, of July, 1874, published a description of the *modus operandi* of a Mr. Parret, who had made a specialty of the operation. The principal variety of the manipulations is that when the testicle is not found in the inguinal canal, the operator, whose hands have been first carefully oiled, pushes through the superior

ring, lacerating the peritoneum, and, going into the abdominal cavity, grabs the testicle, brings it outwards, and removes it as usual.

The mortality in said operation is said to be an average of 10 per 100.

BOGUS DIPLOMA MILL.

[*From the Sunday Dispatch, Philadelphia, April* 22, 1877.]

The Philadelphia Veterinary College, of No. 903 Filbert Street, has bursted like a beautiful bubble, and the provost, secretary, treasurer and faculty, represented in the one person of Robert McClure, horse doctor, are now safely stowed away in a little cell in the county prison. The police authorities have suspected for some time that this "institution" was not granting diplomas "on the square," but on the plan of Dr. Buchanan, of the Pine Street Medical College, and so a scheme was incubated to get down to it. A young man named Francis Standin some time ago opened a correspondence with McClure, with a view to the purchase of a diploma, that he might blossom into a full-fledged horse, mule, and—if the occasion required—cow doctor. He offered to transfer three shares of the Green and Coates Streets Railway Company as the price of the "sheepskin," which hardly met the approval of McClure. He wanted cash.

Standin notified the detectives of what he was doing, and wrote to McClure that he would be at his office yesterday with the money, and would expect to receive the diploma. The price hit upon was one hundred and twenty dollars. The money was marked, and the young man saw McClure, who delivered the diploma, which was filled out, sealed and signed with the names of several horse doctors. A few minutes after a Central Station detective walked in and arrested the diploma man. In the office were found several other sheepskins already filled out with the names of those for whom they were intended. One was marked with the price—one hundred dollars. A batch of correspondence was found in the office, showing that McClure had carried on a lucrative business. He was arraigned before Magistrate Pole, at the Central Station, yesterday afternoon, and, upon the strength of the above evidence, was required to give three thousand dollars bail for another examination on Tuesday. He subsequently acknowledged that the college is a bogus concern; or, in other words, that he is the college.

THE HORSE DOCTOR'S BOGUS DIPLOMAS.

[*From the Times of Philadelphia.*]

The final hearing of Robert McClure, charged with issuing bogus diplomas, was held yesterday at the Central. Dr. Alfred L. Elwyn testified that his signatures to the diplomas was a forgery. He said that about seventeen or eighteen years ago he was President of the Philadelphia Veterinary College, but has had nothing to do with it since 1862, and did not know if it was still in operation. He had never authorized any person to sign his name.

Thomas C. Davis, of the firm of Spangler & Davis, printers, recognized the diplomas as having been printed at their establishment, and identified McClure as the man who had ordered them.

J. H. Warren, professor and teacher of penmanship at Pierce's College, at Tenth and Chestnut Streets, testified that he had written the signatures on the diplomas by McClure's authority. He did not remember if an original was before him. The Magistrate held McClure in $800 bail for procuring money under false pretences, in $1,000 for selling medical diplomas, and in $1,200 for uttering and publishing a forged instrument of writing, making in all $3,000. Three of the diplomas were used as evidence in court—one made out in the name of John Wesley, one in the name of A. H. Pope, and the third in the name of Francis Standen. The latter person had made the complaint. The diplomas had the forged signatures of A. L. Elwyn, as president; George W. Closs, secretary; Robert McClure, M. D., and John H. Gould, M. D.

NEW CURE FOR HYDROPHOBIA.

Take one and one-half ounce of elecampane root bruised, put in a half pint of milk, reduced to one-half by boiling; then take all at one dose in the morning, fasting until afternoon, or at least a very light diet after several hours have elapsed. The second dose the same as the first, except take two ounces of the root. Third dose same as the last, to be taken every other day. Three doses are all that is needed, *and there need be no fear* . . . . (that you will escape). This has been used for over forty years in and around Philadelphia, etc., etc.

We hope our learned colleagues of Alfort will experiment with this as they did with the xanthium spinosum, and show the folly of the operation.

HOW NERVES END IN TENDON.

The termination of nerves in muscle has been carefully studied by Dr. Beale, F. R. S., and also by certain French and German observers. Their termination in tendon is a subject of more novelty. It seems, according to a notice in the *Academy* (December 9), that the tendon of the sterno-radialis muscle in the frog receives a nerve trunk of some size near its point of insertion; the fibres form a network and end in the tendon. By employing special methods of examination, Rollet has succeeded in demonstrating that the ultimate fibres terminate in structures, which he terms "nerve flakes," and which present many points of similarity to the motor end-plates in striated muscle. Their functional significance is doubtful. No reflex movement can be produced by stimulating the tendon; hence Rollet concludes that the nerve must consist of centrifugal fibres.—*Monthly Microscopical Journal.*

COMMUNICATIONS RECEIVED.

G. Zeuner, Long Island, N. Y.; Dr. Osler, Montreal, Can.; M. Stalker, Ames, Iowa; E. F. Thayer, Boston; D. McEachran, Montreal, Can.; J. S. Duncan, Goderich, Ont.; E. Mink, Rochester; A. Smith, Toronto; A. Large, Brooklyn, N. Y.

EXCHANGES.

Medical Record, N. Y.; Scientific Farmer, Boston; Western Agriculturist, Quincy, Ill.; American Agriculturist, N. Y.; Country Gentleman, N. Y.; Chicago Field, Chicago; Hospital Gazette, N. Y.

SPECIMENS.

SENT FOR THE MUSEUM OF THE AMERICAN VETERINARY COLLEGE.

69. Tenia of the Dog.....J. F. Winchester, B. S.
70. Fractured Pelvis.....J. C. Force.
71. Milk Molar Teeth Shed at 3 years old.....W. Wray.
72. Small Turtle.
73. Preparations of Hyoid Apparatus.....S. S. Field.
74. Suppurative Arthritis of Fetlock Joint....W. Blanchard, through C. H. Peabody, D. V. S.